

## METEOROLOGY FOR FEBRUARY, 1866.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of month.	Bar. 37 feet abv. sea level, cor. & reduced		Self - register- ing Thermo- meters.				Wind.		Rain in inches.
	Highest.	Lowest.	Highest in shade.	Lowest in shade.	Highest in sun.	Lowest on grass.	Direction from three daily registers.	Force in lbs. per square foot.	
	In.	In.	°	°	°	°			
1	30·317	30·211	71	58	98·0	44·5	NW SE	1·04	0·11
2	30·391	30·366	71	55	111·0	45·0	NW SE	1·30	
3	30·364	30·315	69	57	92·0	57·5	S SE	·52	
4	30·322	30·250	71	56	112·0	56·5	SE	·78	
5	30·235	30·154	73	55	113·0	54·5	NW SE	·78	
6	30·151	30·009	73	58	110·5	57·5	E SE	·50	
7	30·095	29·929	79	50	117·0	50·0	NW SE	1·04	
8	29·921	29·783	87	59	121·5	50·0	NW SE	1·04	
9	29·789	29·739	77	60	111·5	61·0	SE	1·04	0·03
10	29·855	29·763	71	61	110·0	60·5	SE	1·04	
11	29·868	29·681	82	58	118·0	58·0	NE SE S	·52	
12	29·618	29·321	76	61	86·5	60·0	NW	1·04	
13	30·015	29·969	72	60	116·0	49·0	NW SE	1·30	
14	30·004	29·977	77	53	115·5	52·0	NW	3·64	
15	30·062	30·009	78	50	120·0	49·5	SW NW SE	·52	
16	29·962	29·882	75	59	118·0	46·5	N SE	·78	
17	29·754	29·647	80	55	115·0	55·5	NW SE	1·04	
18	29·771	29·608	87	59	121·5	53·5	N NE	3·12	
19	29·585	29·338	81	69	119·5	68·5	N NW	5·20	
20	29·907	29·821	73	55	107·0	55·0	N NW	3·64	
21	29·855	29·582	85	62	120·0	56·0	NW W SE	·78	
22	29·569	29·441	86	55	122·0	53·0	NW	5·46	
23	29·744	29·727	77	54	113·0	53·0	NW	1·30	
24	30·007	29·864	72	58	114·0	57·5	E SW NW	1·04	
25	30·069	29·934	77	49	105·0	47·0	NW SE	·78	
26	29·915	29·836	79	57	112·5	55·0	NW SE	1·30	
27	29·918	29·847	74	60	81·5	53·0	NW N SW	·52	
28	29·826	29·675	69	53	84·0	57·0	SE S	·78	0·19

Total force 41·86 0·55

The mean in all cases is taken from the sums of the three daily registers, and not from the maximum and minimum.

The direction of the wind is registered from currents moving at a height of 192 feet, and the force according to Lind's Wind Gauge. The supposition, however, of an uniform velocity during the month is a very arbitrary one, and the results can be considered only approximately correct.

The relations of the quantities of rain which fell under the different winds are registered each evening at sundown.

The twenty years' standard tables are used for obtaining the difference from the average.

*Leafing, Flowering, and Fruiting of a Few Standard Plants  
in the Royal Society's Gardens during the Month :—*

- 1st. Peaches commencing to ripen.
- 10th. Kerry pippin apple commencing to ripen.  
Bon Chretien pear commencing to ripen.
- 11th. Windsor pear commencing to ripen.
- 17th. Greengage plum commencing to ripen.
- 22nd. Ash seed commencing to ripen.
- 30th. Sycamore commencing to shed seed.

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Barometer mean, 29·903in., being 0·053in. above the average.  
 Temperature mean, 65·19°, being 2·66° above the ditto.  
 Solar intensity mean, 110·20°, being 1·20° above the ditto.  
 Dew point mean, 52·3°, being 2·09° above the ditto.  
 Humidity of air mean, '66, being 4·5 per cent. below the ditto.  
 Elastic force of vapor mean, '405, being '032 per cent. above the average.  
 Total amount of rain, 0·55in., being 0·92in. below ditto.  
 Increase of spontaneous evaporation on rainfall 5·30 inches.  
 Mean amount of ozone, 8·05, being 1·22 of chromatic scale above the average.  
 Electricity active on the 1st, 14th, 20th, 21st, 23rd, 24th, 25th, and 26th.  
 Lightning on the 19th. Hot wind on the 18th. Sky hazy, with frequent rainbows and lunar-halos through the month.

FRANCIS ABBOTT.

# ANALYSIS OF THE OBSERVATORY RECORDS FOR FEBRUARY, 1866, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c. BY E. SWARBRECK HALL.

February, though having the smallest number of days of any month in the year, has had on the average of the previous nine years, the greatest number of deaths. In last year, however, March was higher. Notwithstanding many meteorological conditions in the present month adverse to health and life, others of more auspicious character have so counteracted the injurious effects, that on the whole the mortuary records give a total of deaths below the February average of the previous nine years, and only one more than last year had, though the heat and dryness of the present month have been so unusually in excess.

*Atmospheric pressure*, 29·903, was only + ·053 above the 20 years' mean of the adopted standard, but + ·102 higher than February 1865 had. The extremes were:—Maximum, 30·391 on the 2nd; minimum, 29·321 on the 12th; being a range for the month of 1·070 inches. Last year the extremes were both much lower, though the range was considerably greater. The greatest movement on any day of the barometer, was a rise of + ·694 of an inch on the 13th. There were six other days in which movements exceeded one-fifth of an inch; the highest being a rise of + ·420 on the 1st, and the lowest a fall of — ·263 on the 17th.

*Wind-force* had a total of 41·86 lbs., being — 15·15 lbs. less than the February average of the previous 9 years, and 16·01 below the 4 years' average of the standard tables. It was also less than 1865 by — 2·35 lbs. *South-east* winds were more than usually numerous, but of so gentle a type that the total force was below the average. *North-west* alone exceeded the average considerably both in number and force. From all the rest of the points of the compass the winds were much below the mean both in frequency and force. The greatest force of the wind from any point was only 2·60 lbs. pressure to the square foot, and registered six times. The *calms* were only 14, being — 1¼ less than the 4 years' mean, — 3·88 below that of the previous eight years, and 5·00 fewer than 1865. Constant, but gentle movement was the character of the winds this month. There was a *hot wind* on the 18th, but of a very subdued kind.

*Temperature* mean, by the three daily observations, was 65·19 degrees; being + 2·66 above the 20 years' mean. Only one year (1855) in the previous 25, had a higher mean, 68·00 degrees. Last year's mean was only 60·74 degrees. The self-registering maxima and minima thermometers gave a mean of 66·75 degrees. The mean of all the maxima or high-day records was 76·50 degrees, while in February 1865, it was only 69·86. The low-night minima gave a mean of 57·00 degrees, which exceeds that of last year by + 5·64 degrees. So that both days and nights of the present month were considerably warmer than in February 1865. The maximum temperature, 87 degrees, was registered on the 8th and 18th. Last year's maximum was only 79. The minimum temperature was, 49 degrees, on the night of the 25th, being 6 degrees higher than the minimum of February 1865. The extreme range of the month, 38 degrees, is much below the February average, for in the previous 25 years, 17 had a much higher maximum, and not one of them so warm a minimum. Equable, but continuous high temperature, therefore, characterised the present February in a very unusual degree.

*Daily-range of temperature* mean, 19·50 degrees, is — ·89 of a degree less than the 20 years' mean, and — 1·00 degree less than 1865 had. The greatest range, 31 degrees, was noted on the 22nd, and the smallest, 10 degrees, registered on the 10th.

*The solar self-registering thermometer* gave a mean of 110·20 degrees, being + 2·33 more than the February average of the previous ten years, and + 3·65 above the mean for 1865. There has not been so much hot sunshine in February since 1857. The maximum of the present month, however, was only 122 degrees, on the 22nd. Only 1861 had a lower maximum (117) in the previous ten years; 1862 had the same as the present month, but all the rest more, the highest

being 143 in February, 1857. The lowest record of the solar-thermometer was 81.5 on the 27th, but on twenty-two out of the twenty-eight days of the month, the records exceeded 100 degrees.

The *terrestrial radiation self-registering thermometer* on the grass, gave a mean of 54.20 degrees, which is +4.73 more than the 20 years' average, and +5.92 above last year's mean. The extremes were, 61 in the night of the 9th, 44.5 in that of the 1st. No February in the previous 10 years gave so warm an earth temperature as the present month.

Rain fell only on the 1st, 9th, 12th, and 28th days of the month, to the aggregate amount of .55 of an inch, which is—92 of an inch below the 20 years' average for February. In 1865 there were 15 wet days in February, and a total rain-fall of 2.94 inches. Out of the previous 25 years, eight had even a smaller rain-fall than the present month. No snow appeared on Mount Wellington during the month, as there did in February 1865.

*Spontaneous evaporation* amounted to 5.85 inches, being much the highest amount in any February since 1856, during which period only have records been kept.

*Elastic-force of vapour* mean was 405 being +32 above the 20 years' average, and +12 more than 1865 had. The extremes were 672 at 1 p.m., on the 12th, 283 at 7 a.m., on the 20th. In the previous 25 years, only 1861, 1858, 1857, and 1856, had a higher mean.

*Humidity* mean was 66, being  $-4\frac{1}{2}$  below the 20 years' mean, and  $-8$  less than in 1865.

*Cloud* mean was only 4.66, which is—1.03 less than the 20 years' average, and  $-1.84$  below 1865. In the 25 years' records, only Februaries 1858 and 1844 had a smaller mean.

*Ozone* had the maximum of 10 (saturation) on the 12th and 28th, and the minimum of 5 on the 2nd. The mean, 8.05 being +1.04 higher than the mean of the previous 8 years, and even +0.24 above 1865. This high degree of aërial purity must principally have arisen from the numerous sea-breezes, together, perhaps, with the abundance of positive electricity. While many other of the phenomena this month were adverse to health and life, their evil influences were much counteracted by this very general atmospheric purity.

*Electricity* had 16 positive indications, with maximum tension of 6.5, while February 1865 had only 3 with maximum tension of 4. Negative indications were 38, with maximum tension of 6.5 also—1865 had 42 negative records with maximum tension of 7. "Nil" was only registered twice, on the 9th and 12th. In February 1865 there were 11 "nils." *Lightning* was seen on the evening of the 19th, the day after the hot wind. No *Thunder* was heard during the month.

The 54 *Deaths* in the present month are  $-5.4$  9ths less than the February average of the previous nine years, - five out of the nine having a much larger mortality, 1857 the same in number, last year one less only, but 1864 and 1861 respectively 7 and 12 less. The analysis of the ages at death, and the diseases causing death, will, however, give a clearer idea of the lethal peculiarities of the month under review.

Feb., 1866.	Ages.	Februaries.										Avg. 9 yrs. 1857-1865
		Jan., 1866.	1865	1864	1863	1862	Min '61	1860	Max '59	1858	1857	
16	Under 1	9 15	10	25	21	8	22	31	34	19	20	5.9
7	1 to 5	1 5	4	9	9	10	13	11	16	5	9	1.9
2	5 to 20	0 2	1	2	1	2	3	2	1	1	1	6.9
6	20 to 45	5 7	11	12	8	3	10	18	8	10	9	6.9
8	45 to 60	5 9	8	5	11	8	14	5	5	8	8	1.9
15	60 and above	11 15	13	16	8	11	5	8	6	11	10	3.9
54		31 53	47	69	58	42	67	75	70	54	59	4.9



"Under one year of age" the deaths are considerably below the average, and only one more than 1865 had. Six out of the nine years had a mortality at this age above that of the present month.

At "1 to 5 years of age" the mortality was also below the average, though 2 more than 1865 had. Six of the nine years were much more numerous.

At "5 to 20" the deaths were slightly above the average, but the same in number as last year.

At "20 to 45" the number was much below the average, and one less than in 1865. Only 1861 had a smaller mortality in this group of ages.

At "45 to 60" the deaths were slightly below the 9 years' average, and one less than 1865 had.

At "60 and above," the deaths were nearly one half more than the average—only 1860 had more, and last year had exactly the same number. It is thus evident that more than two thirds of the mortality of the month has fallen upon children below 5 years old, and old people above 60, the latter, and at "5 to 20," being alone above the nine years' February rate.

Feb., 1866.	Classes of Disease	Februaries.										Avg. of 9 yrs. 1857-1865.	
		Jan., 1866											
			1865	1864	1863	1862	Min. '61	1860	1859	Max. '58	1857		
24	1. Zymotic	6	11	3	28	27	14	19	29	30	7	18	6.9
7	2. Constitutional	4	11	8	14	9	8	13	8	6	6	9	2.9
13	3. Local	14	20	27	17	15	14	28	28	27	32	23	1.9
7	4. Developmental	7	8	8	7	5	2	3	6	5	7	5	6.9
3	5. Violent &c.	0	3	1	3	2	4	4	4	2	2	2	7.9
54		31	53	47	69	58	42	67	75	70	54	59	4.9

In the 1st or *Zymotic Class* of diseases, the deaths were considerably above the nine years' average. 19 were from *bowel-complaints*, of which 12 were under 2 years old, one at 49, and all the rest above 60. Last year these complaints only caused 8 deaths, *i.e.* 7 below 2 years old, and only one above 60; other years, however, suffered a much greater mortality from bowel-complaints than the present. For instance, in February, 1863, there were 21 deaths from these diseases; in 1862, 25; in 1859, 22; in 1858, 24.

In the 2nd or *Constitutional class of diseases* the deaths were considerably below the average, and still fewer than 1865 had. Indeed, only the first two years of the series of 9, had less than the present. Two of the 7 deaths were from *Cancer*, at 41 and 80 years old respectively. The rest were from *Consumption*, of which two females, aged 14 and 22, were born in Tasmania. Last year the deaths from consumption were 6, but only one born in Tasmania.

The 3rd or *Local class* of diseases, had a mortality very much below the average, and considerably less than any other February in the 9 years recorded.

In the 1st order of this class, *Diseases of the brain and nervous system*, the deaths were 9, being 3 more than 1865 had. In the 2nd order, *Diseases of the heart and circulatory system*, there was only one death, while 1865 had 6. In the 3rd order, *Diseases of the lungs and respiratory system*, there were 2 deaths. Last year had 3. There was only one other death in any of the other orders of this class, *i.e.*, the 5th, or *Urinary*. Last year there were 2 in the 4th, and one each in the 6th and 8th orders.

The 4th or *Developmental class of diseases* had above the average deaths though one less than either of the two preceding Februaries had. Four were infants, one a year old, one two months old, and two under a month. The three old people were aged 70, 81, and 85 respectively. The two last died at the male Invalid Asylum.

The 5th or *Violent and accidental class of diseases* had slightly more than the average through precisely the same in number as 1865 had. One was from

burns; another a fall causing *fracture in the neck*, the third knocked down by a race-horse.

The deaths this month on which inquests were held, were 4. Last year had 3. In *Hospital*, inclusive of two of the deaths on which inquests were held the mortality was 9, 1865 had 15. Two only in the present month were received into hospital from other districts, last year had 7.

Of the 54 deaths, 30 were males, 24 females, a much more normal proportion than in 1865, when they were, 36 and 17 respectively. In the *Glenorchy* and *Queenborough* divisions of the registration district, the deaths were 2 and 4, all the rest died in the city.

On four days in the month no deaths took place. In the first week there died 13; in the second 12; in the third 16; in the fourth 13. The greatest number of deaths on any two consecutive days were 7 on the 21st and 22nd.

The registers of births were 53, being 14 less than in 1865 but the Registry Office was closed on more days than usual from public holidays.